Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Brigham Oil & Gas, L.P.
Well Name/Number: Beck 15-10 #1-H
Location: SW SE 15 T29N R55E
County: Roosevelt **, MT; Field (or Wildcat)** Wildcat

Air Quality

(possible concerns)
Long drilling time: No, 30-40 days drilling time.
Unusually deep drilling (high horsepower rig): Triple derrick rig to drill to 19,125'MD/9,819' TVD Bakken Formation horizontal well test.
Possible H2S gas production: Slight H2S gas production.
In/near Class I air quality area: No Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
X Air quality permit (AQB review)
___ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____

Comments: Associated gas to be flared or if a pipeline is run to a gathering facility then it can be hooked up.

Water Quality

(possible concerns)
Salt/oil based mud: Yes to intermediate casing string hole, to be drilled with oil based invert drilling fluids. Horizontal lateral will be drilled with brine fluids. Surface casing freshwater, and freshwater mud system to be used.
High water table: No high water table anticipated.
Surface drainage leads to live water: No, closest drainage is an unnamed ephemeral tributary to Sand Creek, about 1/8 of a mile to the north from this location.
Water well contamination: None, closest water wells in the area are about 1mile and further in any direction from this location. Depth of these wells range from 50' to 480'. Freshwater wells are significantly shallower than the proposed surface casing setting depth of 2100'.
Porous/permeable soils: Yes, sandy silty soils.
Class I stream drainage: No, Class I stream drainages nearby.

Mitigation:
X Lined reserve pit
X Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
__ Other: _____

Comments: 2100' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to prevent problems in and around freshwater drainage.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None anticipated.
High erosion potential: No, location will require a moderate cut of up to 11.6' and moderate fill, up to 16.5', required.
Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of wellsite will be reclaimed.
Unusually large wellsite: Yes, this a very large well site 500'X500'
Damage to improvements: Slight, surface use is grassland.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X_ Stockpile topsoil
__ Stream Crossing Permit (other agency review)
_X_ Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
_X_ Other Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28)

Comments: Will use existing county roads, unnamed county gravel road. About 111' of new access road will be built into this location off existing east-west county road.. Cuttings will be solidified with flyash and buried in the lined reserve pit. Oil base invert drilling fluids will be recycled. Completion fluids will be removed and hauled to commercial Class II Disposal. The pit after solidification will be covered with subsoil if well is productive. If well is not productive subsoil will be spread and topsoil will be spread on top of the subsoil. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Residences about1 mile to the south, 1.5 miles to the east and 1.75 miles to the west from this location. Town of Froid is about 5.25 miles to the northeast from this location.
Possibility of H2S: Slight chance.
Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time.

Mitigation:
_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other _____

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Sufficient distance between location and buildings noise should not be a problem.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified
Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No
Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species is the Sprague's Pipit. MTFWP Natural Heritage Tracker website indicates no species of concerns. One Potential species of concern listed as the Hayden's Shrew.

Mitigation:

__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other:_____

Comments: Private grassland surface lands. No live water nearby. All bird species are migratory. Shrews are not threatened, endangered, candidate or species of concern. They are listed as potential species of concern. No concerns.

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites: None identified.

Mitigation

__ avoidance (topographic tolerance, location exception)
__ other agency review (SHPO, DSL, federal agencies)
__ Other:_____

Comments: Surface location is private grassland. No concerns._____

Social/Economic

(possible concerns)

__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation

Comments: Wildcat Bakken Formation horizontal well. No concerns._____

Remarks or Special Concerns for this site

19,125'MD/9,819'TVD Bakken Formation horizontal well test. No concerns.

Summary: Evaluation of Impacts and Cumulative effects

Short term impacts expected, no long term impacts anticipated.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title:) Chief Field Inspector
Date: February 4, 2011
Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center GWIC website
(Name and Agency)
Roosevelt County water wells
(subject discussed)
February 2, 2011
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Roosevelt County
(subject discussed)

February 2, 2011
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T29N R55E
(subject discussed)

February 2, 2011
(date)

If location was inspected before permit approval:
Inspection date: February 4, 2011
Inspector: Schmidt
Others present during inspection: None